

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

<b>Applicants:</b>	Algirdas A. Underys	)	Attention:
		)	
<b>Serial No.:</b>	08/991,113	)	<b>Primary Examiner</b>
		)	<b>Wyszomierski</b>
<b>Filing Date:</b>	December 16, 1997	)	
		)	Group 1742
<b>Title:</b>	<b>Heat Treatment Method and</b>	)	
	<b>Apparatus</b>	)	

The Honorable Commissioner  
of Patents and Trademarks  
Washington, DC 20231

**DECLARATION OF LEONARD LIUZZI**

Leonard Liuzzi states as follows.

1. I have been an active participant in the tool steel industry for over forty years. My four most recent positions have been:

- A. Division Chief, Processing Engineering Division for Benet Laboratories at Watervliet Arsenal;
- B. Vice-President of Operations and then Executive Vice-President of Ellwood City Forge Co.;
- C. Vice-President and General Manager, Composite Forge Co.; and
- D. President, L and L Engineering Associates.

All of said companies and organizations are participants in the tool steel industry, and all of said entities deal with tool steel bars, rods and blocks on a daily basis.

2. I am familiar with and in fact have studied many U.S. patents in the tool steel industry and am thus familiar with the technical terms and concepts set out in them, and I am also familiar with several basic principles of patent law embodied in them, including the concept that the disclosures in U.S. patent applications are written to be understood by persons skilled in the art.

3. I have read the above U.S. patent application Serial Number 08/911,113 from the perspective of a person skilled in the art to which it pertains.

4. My attention has been particularly directed to the specification as filed and particularly to the text near the top of page 4 which reads as follows:

"Thus if two inch thick rods are to be heat treated a relatively short treatment period may be all that is required and in all probability the time curves already formulated for two inch thick workpieces in existing furnaces can be used in an infrared furnace. By the same token, if a 10" by 10" cross-section is to be heat treated a substantially longer processing time will be required due to the time lag of the temperature rise in the center of the workpiece."

5. With respect to the foregoing passage I was requested to state my understanding, as a man skilled in the art, of what object was being described in the last sentence of said passage, namely:

"By the same token, if a 10" by 10" cross-section is to be heat treated a substantially longer processing time will be required due to the time lag of the temperature rise in the center of the workpiece."

6. In my opinion the passage set out in paragraph 5 above describes a block since it is the common and universally accepted practice to describe a block by quoting width and height dimensions; i.e.: the phrase "10" x 10"" can only mean a block. Here, I understand

the text to refer to a piece of tool steel being 10" wide by 10" high by some indefinite length, most likely either 10" or a value near thereto. Even if the length dimension was many feet, I understand a block is still being described since I have never heard of a 10" x 10" rod or bar; such a cross-section dimension far exceeds the cross-section dimensions of a rod or bar.

7. It is therefore my opinion that a "block" was disclosed in the specification as filed, and specifically in line 6 of page 4.

8. My attention has also been drawn to the contention that the application as filed did not support the feature "maintaining said tool steel workpiece stationary" in claims 15 and 16.

9. In my opinion the application as filed discloses the concept of maintaining the tool steel workpieces stationary during heat treatment. My opinion is based on the following:

a. Each of the three paragraphs on page 1 of the specification are directed to processing in which the tool steel workpiece is maintained stationary during heat treatment.

Specifically, "heat treatment of tool steels" always means to me, unless there is a specific statement to the contrary, a furnace or other piece of capital equipment in which the workpieces are held stationary during treatment. This meaning to me, as a man skilled in the art, is reinforced by the phrase "currently employed heat treatment ... apparatus" in paragraph 1.

Since a thin flexible strip of metal which can be subjected to heat while moving is never machined, the reference to "machining" in paragraph 2. can refer, in the sense of the smallest size of a tool steel workpiece, to only a rod or bar, and I have never heard of heat treating a moving rod or bar.

The reference to "decarburized" in paragraph 3. can only refer to a stationary workpiece, since decarburizing is not a quick process; at least a substantial number of minutes and very often at least a half an hour, is required to decarburize.

b. The reference to "vacuum furnaces" on page 2. always means, in my

"With respect to equipment it is believed that existing heat treatment furnaces can be used with little or no modification, or, preferably, with selective modification" (emphasis mine)

clearly describes to me a furnace in which the workpiece is maintained stationary. This is further emphasized by the sentence in the next paragraph:

"A thin coating of gold, or silver, or aluminum over some or substantially all of the interior surfaces of the furnace will be quite suitable."

Obviously the gold, silver or aluminum coating is needed because, after a short while, a stationary workpiece begins to reflect energy back to its immediate surroundings at dangerous levels, a condition which would not occur were the workpiece being moved through the furnace thereby constantly presenting fresh, cold metal to the heat source in the furnace.

d. The reference on page 3 to placing "the workpieces ... as close together as convenient" discloses to me a series of two or more separate workpieces, not a moving strip.

e. The further reference to "Ceramic or other high melting point support structures ... to support the workpieces" discloses to me stationary support structures, since I have never heard of a movable ceramic support structure in a heat treat furnace, and stationary support structures can only be associated with stationary workpieces.

f. The phrase:

"Then if two inch thick rods are to be heat treated a relatively short treatment period may be all that is required and in all probability the time curves already formulated for two inch thick workpieces in existing

required and in all probability the time curves already  
formulated for two inch thick workpieces in existing  
furnaces can be used ... (emphasis mine)

can only refer to stationary workpieces since the already formulated time curves can refer only to time curves in existing stationary treatment furnaces.

10. It is therefore my opinion that "maintaining said tool steel workpiece stationary" was disclosed in the application as filed, and specifically on all pages thereof.

9/25/99  
Date

Leonard Liuzzi  
Leonard Liuzzi

**DECLARATION**

The undersigned being hereby warned that willful false statements and the like so made are punishable by fine or imprisonment, or both, under 18 U.S.C. 1001, and that such willful false statements may jeopardize the validity of the application or any resulting patent and that all statements made of his/her own knowledge are true and all statements made on information and belief are believed to be true.

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Date

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